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31. The method of claim 27 wherein said step of providing a gas into said opening is at a temperature of from about 100°C to about 450°C.

32. The method of claim 28 wherein said step of providing a gas into said opening is at a temperature of from about 100°C to about 450°C.

REMARKS

Claim 21 has been amended and claims 26 to 32 have been added. Claims 21 to 32 are now active in this application.

Claim 21 was rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The amendment of claim 21 is believed to overcome this rejection.

Claims 21 and 24 were rejected under 35 U.S.C. 102(e) as being anticipated by Nakata (U.S. 5,620,925). The rejection is respectfully traversed.

Claim 21
Claim 21 relates to a method of fabricating an electronic device having a first conductive structure electrically connected to a second conductive structure situated over a semiconductor substrate, the method comprising the steps of: forming the first conductive structure and forming an insulating layer over the first conductive structure, the insulating structure having an opening with sidewalls and a bottom and exposes a portion of the first conductive structure. The claim up to this point is admittedly old in the art. The principal inventive feature set forth in the claim relates to the step of removing residue from the opening by providing a gas comprised of hydrogen incorporated within a plasma into the opening in the insulating layer and then depositing a conductive material into the opening using chemical vapor deposition. The advantage of this type of chemistry is set forth on page 5 of the specification which is that high

ion energies are not required, thereby reducing or eliminating the undesirable deformation of high aspect ratio features or topologically sharp features often associated with modern semiconductor devices. As stated at page 3 of the specification, the prior art utilized chlorine or bromine chemistries that provided serious problems which are overcome by use of the chemistry of the present invention.

A review of Nakata clearly indicates that the chemistry used is the undesirable prior art chemistry mentioned in the subject specification, namely halogen chemistry, halogens being lithium, chlorine, bromine and iodine. The use of a hydrogen plasma chemistry is nowhere taught or even remotely suggested in Nakata et al. It follows that the inventive concept of the claims on appeal is nowhere taught or even remotely suggested by the cited reference.

Claim 24 depends from claim 21 and therefore defines patentably over Nakata for at least the reasons set forth above with reference to claim 21.

Claim 24 further limits claim 21 by requiring that the conductive material be comprised of a metal selected from the group consisting of: aluminum, copper, titanium, and a combination thereof. No such combination is taught or suggested by Nakata.

Claims 21, 23, and 25 were rejected under 35 U.S.C. 102(e) as being anticipated by Taguwa (U.S. 6,020,254). The rejection is respectfully traversed. *Taguwa claims substantially same dated matter*

The declarations of Barton E. Showalter and Christopher W. Kennerly, attached hereto, demonstrate a conception with diligence up to the filing of the provisional application (Serial No. 60/033,728, filed December 20, 1996) upon which the subject application application is based which predates the filing date of Taguwa (November 21, 1996). Note that activity toward preparation and filing of the subject application commenced at least as early as September 17, 1996 with continual activity thereafter as required under M.P.E.P. 2138.06 as expressed in

Keizer v. Bradley, 270 F2d 396, 397, 123 USPQ 215, 216 (CCPA 1959) and Emery v. Ronden, 188 USPQ 264, 268 (Bd. Pat. Inter. 1974). Accordingly, Taguwa is not available as a reference in this application.

Claims 21 and 22 were rejected under 35 U.S.C. 102(e) as being anticipated by Park et al. (U.S. 6,051,492). The rejection is respectfully traversed is Park et al. is not available as a reference in this application for the same reasons as presented above with reference to Taguwa.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J - G", with a long, sweeping horizontal line extending to the right.

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